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| 09/927,089 | 08/09/2001 | Sinichi Ishibashi | M1971-98 | 4097 |
| 7278 | 7590 | 01/02/2004 | EXAMINER | |
| DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257 | | | CULBERT, ROBERTS P | |
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1763

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,089

Applicant(s)

ISHIBASHI ET AL.

Examiner

Roberts Culbert

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/25/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-18 and 20 is/are pending in the application.
4a) Of the above claim(s) 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-15 and 18 is/are rejected.
- 7) ☒ Claim(s) 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group II in the response filed 11/25/03 is acknowledged. The traversal is on the ground(s) that the invention of Group II cannot be made by another and materially different process.

This is not found persuasive because applicant has not provided any convincing reasoning that a process that is not performed continuously cannot form the same product. Applicant has only stated that the product cannot be formed by another and materially different process without providing reasoning or evidence to show how a different product would result. The amendment requiring a process gas mixture comprising inert gas, an oxygen gas, and a nitrogen gas does not affect the previous showing of distinction between the claim groups.

The requirement is still deemed proper and is therefore made FINAL.

Response to Arguments

Applicant's arguments filed 11/25/03 have been fully considered but they are not persuasive.

Applicant has argued that Chu does not teach the steps of forming a laminate, forming a protective layer and plasma-etching continuously. The argument is not persuasive because it may be interpreted that Chu does perform the claimed steps in a continuous fashion. The term "continuous" is interpreted by the office to mean either performing in succession, or performing without interruption. As the claims are broadly worded, there is no clear indication that the steps must be performed "without intermediate steps" as suggested by applicant. Chu teaches that the steps are "continuously" performed in that the steps are not individually interrupted or in that they are performed in succession.

Applicant's argument that Chu does not disclose all of the elements of amended claim 13 has also been considered, but is moot in view of the new ground(s) of rejection below.

Applicant has argued that the official notice regarding claim 18 is not supported. The argument is moot in view of the new grounds of rejection presented below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 13-15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,635,037 to Chu in view of U.S. Patent 5,798,135 to Ueda et al.

Referring to figure 3, Chu teaches a method for forming a thin-film magnetic recording medium comprising the steps of forming a laminate (14 and 15) for magnetic data recording on a nonmagnetic substrate (12 and 13); said step of forming being a dry processes in a vacuum atmosphere; forming a protective layer (20) on said laminate; said step of forming a protective layer being a dry process in a vacuum atmosphere', plasma-etching a first surface of said protective layer (Col. 7, Lines 1-8); said step of plasma-etching conducted in a vacuum; conducting the steps of forming a laminate, forming a protective layer, and plasma-etching continuously (Col. 7, Lines 26-33); and forming a lubricant layer (17) on said first surface of said protective layer, whereby surface defects are minimized and surface quality is greatly improved.

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Although Chu teaches that by proper choice of the types of gases and the proportions thereof etching rate may be controlled (Col. 7, lines 2-8) and suggests a mixture of oxygen and argon (an inert gas) Chu does not teach the use of a process gas mixture comprising an inert gas, an oxygen gas and a nitrogen gas.

Ueda teaches a method of forming a thin-film magnetic recording medium in which plasma is used to modify the surface of a carbonaceous film protective layer. The process gas may include argon, oxygen, and nitrogen (See Claim 9, and Col. 7, lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time of invention to use a process gas including argon, oxygen, and nitrogen, in order to affect the etch rate as suggested by Chu.

Regarding claims 14 and 15, Chu teaches reactive ion etching or sputtering in the same vacuum apparatus to deposit the laminate and the protective layer (Col. 7, lines 26-33).

Regarding claim 18, as applied above, Cho in view of Ueda teaches the method of the invention substantially as claimed, but does not show a mixture of Ar O₂, and N₂ with a ratio of 6:1:3. However, it would have been obvious at the time of invention to optimize the ratio of known etch gasses in order to control etch rate and material selectivity as taught by Chu (Col. 7, lines 2-8).

The above-cited dependent claims differ from Cho in view of Ueda only by specifying various compositions. A person having ordinary skill in the art at the time of the claimed invention would have found it obvious to modify the ratio of reactant species by using different processing parameters because same were known to be cause effective variables and routine experimentation would have been expected to optimize them. *In re* Boesch, 205 USPQ 215 (CCPA 1980).

Changes in temperature, concentrations, or other process conditions of an old process, do not impart patentability unless the recited changes are critical, i.e., they produce a new and unexpected result.

Allowable Subject Matter

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Claims 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

R. Culbert



GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700